

54. (New) A device manufactured by the device manufacturing method according to

Claim 53.--

REMARKS

Favorable consideration of this application, as presently amended, is respectfully requested.

The present preliminary amendment is submitted to place the above-identified application in more proper format under United States practice.

By the present preliminary amendment the specification has been amended to no longer recite any reference numerals in the "Disclosure of Invention" section.

Further, original Claims 1-27 have been cancelled by the present response and new Claims 28-54 are presented for examination. New Claims 28-54 are deemed to be self-evident from the original disclosure, including original Claims 1-27, and thus are not deemed to raise any issues of new matter.

The present application is believed to be in condition for a full and thorough examination on the merits. An early and favorable consideration of the present application is hereby respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Gregory J. Maier  
Registration No. 25,599  
Attorney of Record  
Surinder Sachar  
Registration No. 34,423



**22850**

(703) 413-3000  
Fax #: (703)413-2220  
GJM:SNS/smi

I:\atty\SNS\206379US-pr.wpd

<b>Marked-Up Copy</b>
Serial No:
Amendment Filed on:

IN THE SPECIFICATION

Please replace the paragraph on page 6, lines 2-13, with the following text:

--According to the first aspect of the present invention, there is provided a stage unit comprising: a sample stage [(WST or RST)] that holds a sample [(W or R)]; a stage driving mechanism [(72 or 44)] that drives the sample stage in at least one direction; a first transmitting member [(84A, 84B), (84C, 84D, 84E, 84F), or 130)] to which at least one part of the stage driving mechanism is connected and a reaction force caused by driving the sample stage is transmitted; and a first damping member [(85, or (142, 144, 146, 148))] that is provided to the first transmitting member and damps a vibration of the first transmitting member.--

Please replace the paragraph on page 8, lines 2-13, with the following text:

--When the first damping member is an electro-mechanical transducer that generates a mechanical strain by applying an electric energy, the stage unit according to the present invention may further comprise a controller [(50)] that controls the electro-mechanical transducer in accordance with the reaction force caused by driving the sample stage. In such a case, the controller controls the electro-mechanical transducer in accordance with a reaction force caused by driving the sample stage, thereby enabling the vibration and deformation of the first transmitting member due to the reaction force to be suppressed.--

Please replace the paragraph on page 9, lines 7-17, with the following text:

--The stage unit according to present invention may further comprise a stage base [(16 or 42)] that movably supports the sample stage and is supported by the first transmitting member. In such a case, the sample stage is driven and, then, a reaction force caused by the driving is applied to the stage base, thereby vibrating the first transmitter that supports the stage base. However, since the vibration is damped by the first damping member, it is possible to suppress an influence which is exerted upon positional controllability of the sample stage by the vibration.--

Please replace the paragraph on page 9, line 18, through page 10, line 2, with the following text:

--With the stage unit according to present invention, the sample stage can comprise a first stage [(162)] that moves in the one direction and a second stage [(164)] that holds the sample and can be relatively moved to the first stage. In such a case, upon movement of the first stage, the reaction force of the drive force is transmitted to the first transmitting member, thus vibrating the first transmitting member. However, the vibration is damped by the first damping member. In this case, if the second stage can be relatively moved in a direction perpendicular to a movement direction of the first stage, the second stage can move in two axial directions perpendicular to each other and can hold the sample.--

Please replace the paragraph on page 10, line 3, through page 11, line 1, with the following text:

--In this case, the stage unit further can comprise a second damping member [(172A, 172B, 172C, 172D)] in which a reaction force caused by driving the second stage is transmitted via the first stage; a linear actuator [(174A, 174B)] that drives the second transmitting member in the one direction; a second damping member [(180)] that is provided

to the second transmitting member and damps a vibration of the second transmitting member due to the reaction force caused by driving the second stage; and a first controller [(50)] that controls the stage driving mechanism and the linear actuator so that the first stage and the second transmitting member integrally move in the one direction. In such a case, upon movement of the second stage, the reaction force of the drive force of the second stage acts on the first stage, the reaction force is transmitted to the second transmitting member from the first stage, and the second transmitting member is vibrated. However, the vibration is damped by the second damping member. This results in sufficiently decreasing the reaction force caused upon movement of the second stage which is transmitted to the floor surface side via the second transmitting member. Also, the first controller controls the stage driving mechanism and the linear actuator so that the first stage and the second transmitting member integrally move in one direction. Accordingly, the first stage can be driven without problems.--

Please replace the paragraph on page 12, lines 15-24, with the following text:

--According to the second aspect of the present invention, there is provided a first exposure apparatus that is characterized by comprising a mask stage unit including a mask stage that moves and holds a mask [(R)], as a sample, having a pattern, and a substrate stage unit including a substrate stage that moves and holds a substrate [(W)], as a sample, onto which the pattern is transferred, the stage unit of the present invention is used for at least one of the mask stage unit and the substrate stage unit.--

Please replace the paragraph on page 13, lines 14-23, with the following text:

--In this case, the first exposure apparatus further can comprise a projection optical system [(PL)] that is arranged between the mask [(R)] and the substrate [(W)] and projects the pattern onto the substrate. In such a case, the pattern of the mask is projected and

transferred onto the substrate via the projection optical system. However, the influence of the vibration is suppressed in such a case as mentioned above. Accordingly, it is possible to precisely transfer an image of the pattern of the mask onto the substrate via the projection optical system.--

Please replace the paragraph on page 13, line 24, through page 14, line 22, with the following text:

--In this case, the first exposure apparatus further can comprise a holder [(14)] that is independent of the first transmitting member with respect to a vibration and holds the projection optical system. In such a case, the first transmitting member and the holder that holds the projection optical system have the independent relationship with respect to the vibration. Therefore, little direct influence is exerted upon the projection optical system by the reaction force caused by driving the sample stage and by the vibration of the first transmitting member. On the contrary, the first damping member damps the vibration of the first transmitting member (and a reaction force that becomes a factor thereof) and the damped vibration is transmitted to the earth (set floor), thereby effectively suppressing the influence to transmit the vibration (force) to the holder from the earth. Therefore, the reaction force upon moving (driving) the sample stage becomes no vibration factor of the projection optical system that is held by the holder. Accordingly, the positional shift of the pattern to be transferred or the image blur due to the vibration of the projection optical system can be effectively suppressed, and the exposure accuracy can be improved. Also, by improving positional controllability of the sample stage, acceleration, velocity, and size of the sample stage can be increased, thus improving throughput.--

Please replace the paragraph on page 14, line 23, through page 15, line 11, with the following text:

--In this case, when the pattern is transferred onto the substrate, the first exposure apparatus may further comprise a controller [(50)] that synchronously moves the mask and the substrate. In such a case, when the pattern is transferred onto the substrate, the controller synchronously moves the mask and the substrate, thereby transferring the pattern of the mask onto the substrate via the projection optical system with so-called scanning exposure. By improving positional controllability of the sample stage that holds at least one of the mask and the substrate, it is possible to improve tracing performance of the sample to the mask and, thus, it is also possible to improve precision of synchronizing the mask and the substrate and to reduce the synchronous adjusting and determining time. Therefore, the mask pattern can be precisely transferred onto the substrate and throughput can also be improved.--

Please replace the paragraph on page 16, line 26, through page 17, line 2, with the following text:

--In the second exposure apparatus of the present invention, the stage may be a substrate stage [(WST)] that moves and holds the substrate. Alternatively, the stage may be a mask stage [(RST)] that moves and holds the mask [(R)] on which the pattern is formed.--

Please replace the paragraph on page 17, lines 3-6, with the following text:

--The second exposure apparatus of the present invention further can comprise a driver [(202A, 202B)] that drives the stage and at least one part of which is connected to the counter stage.--

Please replace the paragraph on page 17, lines 7-14, with the following text:

--In this case, the driver may [has] have a mover [(214A, 214B)] and a stator [(212A, 212B)] and the stator may be attached to the counter stage. In such a case, when the driver generates a drive force and, then, drives the mover together with the stage, the stator is

moved to the opposite integrally with the counter stage by a reaction force of the drive force and, thus, the reaction force is absorbed or suppressed.--

Please replace the paragraph on page 17, line 23, through page 18, line 25, with the following text:

--The second exposure apparatus of the present invention further can comprise a projection optical system [(PL)] that projects the pattern onto the substrate and a second supporting frame [(58)] that is provided independently of the first supporting frame with respect to a vibration and supports the projection optical system. In the second exposure apparatus of the present invention, as mentioned above, the counter stage moves in the direction opposite to the stage in accordance with the movement of the stage and the reaction force is absorbed. The damping member damps a reaction force that cannot be absorbed and a vibration of the first supporting frame due thereto. Hence, it is possible to effectively prevent the reaction force accompanied by the driving of the stage from becoming a vibration factor of the projection optical system supported by the second supporting frame different from the first supporting frame. The first supporting frame and the second supporting frame have an independent relationship in respect to the vibration, so that there is little danger that, if a slight vibration remains in the first supporting frame due to the reaction force by driving the stage, this vibration becomes the vibration factor of the projection optical system. Accordingly, the positional shift of the pattern to be transferred or the image blur caused, due to the vibration of the projection optical system, can be effectively suppressed, and the exposure accuracy can be improved. And, at least one of the mask stage and the substrate stage can be increased in size and in acceleration and velocity, thereby also improving throughput.--

IN THE CLAIMS

Claims 1-27 (Deleted).

Claims 28-54 (New).